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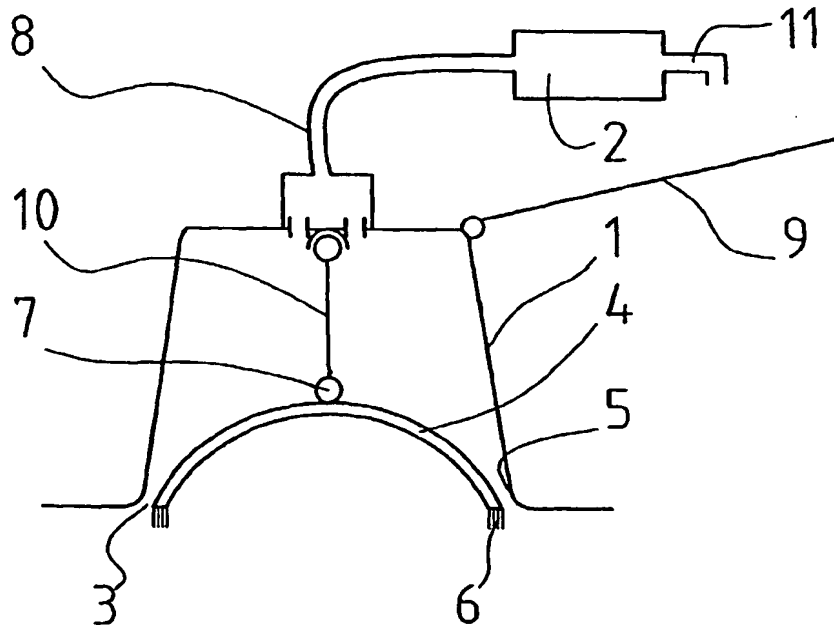
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- (71) Applicant (*for all designated States except US*): STERBA, Miroslav [CZ/CZ]; Taussigova 1172, 182 00 Praha 8 (CZ).
- (72) Inventor; and
- (75) Inventor/Applicant (*for US only*): NAVRATIL, Oldrich [CZ/CZ]; Babylon c. 48, 345 06 Domazlice (CZ).
- (74) Agents: ANDERA, Jiri et al.; Rott, Ruzicka & Guttman, P.O. Box 94, 170 00 Praha 7 (CZ).
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- Declaration under Rule 4.17:
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[Continued on next page]

(54) Title: VACUUM CLEANER FOR RESERVOIRS



(57) Abstract: A vacuum cleaner for reservoirs, especially swimming pools, comprising a working chamber (1) provided with an inlet (3) for liquid, connected with a vacuum generating unit (2). Between the inlet (3) of liquid and the vacuum generating unit (2) there is a rotary-shaped rolling rotor (4) placed in the flow of drawn in liquid. The rolling rotor (4) being arranged in swivelling and rotary manner and encompassed with a surface (5) for rolling. In the contact point between the rolling rotor (4) and the surface (5) for rolling the rolling rotor (4) has smaller diameter than the surface (5) for rolling. The rotor (4) is connected with at least one brush (6).

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 E04H4/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 E04H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 799 351 A (FRENTZEL HERMAN E ET AL) 1 September 1998 (1998-09-01) column 4, line 53 -column 8, line 59; figures 1-9	1,3-7
A	US 5 044 034 A (IANNUCCI ANTHONY A) 3 September 1991 (1991-09-03) the whole document	1,4-7
A	EP 0 558 337 A (SEBOR PAVEL) 1 September 1993 (1993-09-01) column 9, line 1 -column 14, line 39; figures 1-11	1,4-7
A	EP 0 475 736 A (PEARCE RONALD JAMES) 18 March 1992 (1992-03-18) column 3, line 3 -column 7, line 18; figures 1-8	1,4-6
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☒ Patent family members are listed in annex.

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European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Stefanescu, R

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International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>WO 99 61790 A (SEDLACEK MIROSLAV ;HOSTIN STANISLAV (SK)) 2 December 1999 (1999-12-02) cited in the application page 4, line 9 -page 8, line 11; figures 1-5</p> <p style="text-align: center;">-----</p>	1

INTERNATIONAL SEARCH REPORT

Intel... application No

PCT/CZ 03/00035

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5799351	A	01-09-1998	US 5379473 A	10-01-1995
			US 5293659 A	15-03-1994
			AU 685529 B2	22-01-1998
			AU 8090994 A	23-05-1995
			BR 9407983 A	03-12-1996
			CA 2175364 A1	11-05-1995
			DE 69430135 D1	18-04-2002
			DE 69430135 T2	28-11-2002
			EP 0726998 A1	21-08-1996
			ES 2179852 T3	01-02-2003
			WO 9512730 A1	11-05-1995
			ZA 9408388 A	25-07-1996
			AU 686268 B2	05-02-1998
			AU 8091094 A	23-05-1995
			BR 9407948 A	26-11-1996
			CA 2175208 A1	11-05-1995
			DE 69425754 D1	05-10-2000
			DE 69425754 T2	19-04-2001
			EP 0726999 A1	21-08-1996
			ES 2153437 T3	01-03-2001
			WO 9512731 A1	11-05-1995
			ZA 9408386 A	27-06-1995
			US 5428854 A	04-07-1995
			AU 643831 B2	25-11-1993
			AU 8461291 A	26-03-1992
			BR 9104046 A	02-06-1992
			CA 2051936 A1	22-03-1992
			DE 69123524 D1	23-01-1997
			DE 69123524 T2	15-05-1997
			EP 0476413 A2	25-03-1992
			ES 2096607 T3	16-03-1997
			HK 1008060 A1	30-04-1999
			NZ 239886 A	26-08-1994
			ZA 9107026 A	27-05-1992
US 5044034	A	03-09-1991	NONE	
EP 0558337	A	01-09-1993	US 5404607 A	11-04-1995
			AU 663920 B2	26-10-1995
			AU 663921 B2	26-10-1995
			AU 3373793 A	02-09-1993
			BR 9300705 A	31-08-1993
			DE 69307358 D1	27-02-1997
			DE 69307358 T2	12-06-1997
			EP 0558337 A1	01-09-1993
			ES 2096201 T3	01-03-1997
			NZ 245991 A	26-07-1995
			US 5664275 A	09-09-1997
			US 5797156 A	25-08-1998
			US 5974647 A	02-11-1999
			CA 2090195 A1	29-08-1993
			US 5285547 A	15-02-1994
			ZA 9301377 A	23-09-1993
			US 5303444 A	19-04-1994
			US 5371910 A	13-12-1994
			ZA 9301380 A	21-10-1993
			US 5274868 A	04-01-1994
			ZA 9301378 A	23-09-1993

INTERNATIONAL SEARCH REPORT

International Application No

PCT/CZ 03/00035

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0558337 A		US 5386607 A	07-02-1995
		US 5261287 A	16-11-1993
		ZA 9301379 A	23-09-1993
		US 5259258 A	09-11-1993
		US 5259082 A	09-11-1993
EP 0475736 A	18-03-1992	AT 137296 T	15-05-1996
		AU 637934 B2	10-06-1993
		AU 8381991 A	19-03-1992
		DE 69119006 D1	30-05-1996
		DE 69119006 T2	12-06-1997
		EP 0475736 A1	18-03-1992
		ES 2087973 T3	01-08-1996
		US 5226205 A	13-07-1993
		ZA 9107219 A	27-05-1992
WO 9961790 A	02-12-1999	AU 3594099 A	13-12-1999
		BR 9910636 A	06-02-2001
		WO 9961790 A1	02-12-1999
		EP 1082538 A1	14-03-2001
		JP 2002516958 T	11-06-2002